

**Remarks/Arguments**

The Applicants respectfully request further examination and reconsideration in view of the above amendments and arguments set forth fully below. Claims 1, 8, 10, 12-14, 16, 17, 19, 29-32, 38, 40, 41, 44, 128-130 and 132-135 were pending. No Claims have been amended. Accordingly, Claims 1, 8, 10, 12-14, 16, 17, 19, 29-32, 38, 40, 41, 44, 128-130 and 132-135 are currently pending.

**Claim Rejections Under 35 U.S.C. §112**

Within the Office Action, Claims 1, 8, 10, 12-14, 16, 17, 19, 29-32, 38, 40, 41, 44, 128-130 and 132-135 have been rejected under 35 USC 112 for failing to point out and particularly state the claimed subject matter. Specifically, it is stated that fingers extend in three dimensions. It is clear from looking at Figures 3A and 3B that at some point, the fingers must extend to an aperture to allow fluid to flow in the Z direction. However, there are a plurality of first fingers that emanate from the inlet, and there are a plurality of a second set of fingers that emanate from the first set of fingers. It follow naturally that some of these several fingers must at some point be configured:

As shown in Figure 3A, the fluid enters manifold layer 106 via the inlet port 108 and flows along the inlet channel 116 to several fingers 118 which branch out from the channel 116 in several directions in the X and/or Y directions to apply fluid to selected regions in the interface layer 102. The fingers 118 are arranged in different predetermined directions to deliver fluid to the locations in the interface layer 102 corresponding to the areas at or near the hot spots in the heat source. These locations in the interface layer 102 are hereinafter referred to as interface hot spot regions. The fingers are configured to cool stationary as well as temporally varying interface hot spot regions. **As shown in Figure 3A, the channels 116, 122 and fingers 118, 120 are disposed in the X and/or Y directions in the manifold layer 106. Thus, the various directions of the channels 116, 122 and fingers 118, 120 allow delivery of fluid to cool hot spots in the heat source 99 and/or minimize pressure drop within the heat exchanger 100.** Alternatively, channels 116, 122 and fingers 118, 120 are periodically disposed in the manifold layer 106 and exhibit a pattern, as in the example shown in Figures 4 and 5. [emphasis added]

The specification clearly supports a first plurality of fingers (referred to as “channels”) and a second plurality of fingers that allow fluid to be delivered to a hot spot. The channels and fingers are disposed in the X-Y directions. The apertures were clarified in the previous response to Office Action as not fingers themselves. The fingers only direct fluid along the X-Y plane, as defined herein.

Within the Office Action, Claims 132, 133 and 135 are rejected under 35 USC 112 as failing to comply with the written description requirement. Specifically, it is stated that fluid flow is not disclosed. Applicants draw attention to Figure 3A, clearly showing fluid flow through arrows. Furthermore, the terms “inlet” and “outlet” as pointed to in the paragraph above indicate direction of flow to the person of ordinary skill.

Within the Office Action, Claim 135 has been rejected for antecedent basis issues. Specifically, it is stated that “outlet finger” and “plurality of outlet fingers” do not have antecedent basis. Applicants disagree. “A plurality of outlet fingers,” “a plurality of secondary outlet fingers” and other elements are introduced within the Claim and “one of the outlet fingers” and “one of the secondary outlet fingers” are recalled later in the Claim. One of a plurality is a subset of that plurality. When a plurality of an element is disclosed, one within the plurality is also disclosed.

### **Claim Rejections Under 35 U.S.C. §103**

Within the Office Action, Claims 1, 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132-135 are rejected under 35 U.S.C. §103(a) as obvious over the combined teachings of U.S. Patent No. 5,388,635 to Gruber et al. (hereinafter “Gruber”) and U.S. Patent No. 5,761,037 to Anderson et al. (hereinafter “Anderson”). The Applicants respectfully disagree.

Within the Office Action, element 28 is pointed to as an inlet port/ channel. However, in Claim 1, the inlet and channel are distinctly claimed elements. Examiner points to the portion of the channels 30 as being a first plurality of fingers (emanating radially) and second plurality (emanating from the first portion). Even if such a characterization is correct, there is no separate teaching of an inlet channel and an inlet port pointed to within Gruber. As a result, not every element of Claim 1 has been disclosed within Gruber, and Anderson is not introduced to teach any inlet ports or channels. Accordingly, Claim 1 is allowable over the teachings of Gruber, Anderson and their combination.

Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130, 132-134 are dependent on independent Claim 1. Since independent Claim 1 is an allowable base claim, Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 are all also allowable as being dependent upon an allowable base claim.

With regards to Claim 135, the claim element “a plurality of secondary inlet branches” is not addressed within the office action. For example, inlet fingers (synonymous with branches) 118 are multiple. Within the Office Action, the first portion of the channels 30 and second portion of the channels 30 were previously referred to as the first and second channels of Claim 1. However, there is no teaching in Gruber of multiple channels emanating from any portion of the channels 30 of Figure 8A or any other figure. As a result, Gruber does not teach every element of Claim 135, and Anderson is not introduced to teach any such element. No cited prior art reference teaches such a limitation. As a result, Claim 135 is allowable over the combination of the cited prior art.

Within the Office Action, Claims 1, 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132-135 are rejected under 35 U.S.C. §103(a) as obvious over the combined teachings of Gruber, Anderson and Chu (of record) or Frey (of record). The Applicants respectfully disagree.

Regarding Claim 1, Chu or Frey also do not delineate distinct elements of an inlet port and an inlet channel. Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are dependent on independent Claim 1. Since independent Claim 1 is an allowable base claim, Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are all also allowable as being dependent upon an allowable base claim.

Also, there is no teaching of a plurality of secondary channels emanating from a first channel specifically regarding Claim 135. For at least these reasons, independent Claim 135 is allowable over the teachings of Gruber, Anderson, Chu, Frey and their combination.

Within the Office Action, Claims 1, 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132-135 are rejected under 35 U.S.C. §103(a) as obvious over the combined teachings of Gruber/Anderson or Gruber/Anderson/Chu/Frey as applied to claims 1, 8, 10, 12-14, 17, 19, 32, 38, 40, and 128-132 above and further in view of either Hou (of record) or Messina (of record). The Applicants respectfully disagree.

Regarding Claim 1, Hou and Messina also do not delineate distinct elements of an inlet port and an inlet channel. Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are dependent on independent Claim 1. Since independent Claim 1 is an allowable base claim, Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are all also allowable as being dependent upon an allowable base claim.

Also, there is no teaching of a plurality of secondary channels emanating from a first channel specifically regarding Claim 135. For at least these reasons, independent Claim 135 is allowable over the teachings of Gruber, Anderson, Chu, Frey, Hou, Messina and their combination.

Within the Office Action, Claim 16 is rejected under 35 U.S.C. §103(a) as being unpatentable over the combined teachings of Gruber/Anderson alone or Gruber/Anderson/Chu/Frey alone or in view of Hou or Messina as applied to claim 1 above, and further in view of Herrell (of record). The Applicants respectfully disagree.

Claim 16 is dependent on independent Claim 1. Since independent Claim 1 is an allowable base claim, Claim 16 is also allowable as being dependent upon an allowable base claim.

Within the Office Action, Claims 29-32 are rejected under 35 U.S.C. §103(a) as being unpatentable over the combined teachings of Gruber/Anderson alone or Gruber/Anderson/Chu/Frey alone or in view of Hou or Messina as applied to claim 1 above, and further in view of Tonkovich (of record). The Applicants respectfully disagree.

Claims 29-32 are dependent on independent Claim 1. Since independent Claim 1 is an allowable base claim, Claims 29-32 are also allowable as being dependent upon an allowable base claim.

Within the Office Action, Claims 1, 8, 10, 12-14, 17, 19, 29-32, 38, 40, 128-130 and 132-135 are rejected under 35 U.S.C. §103(a) as obvious over the combined teachings of Gruber in view of the Jiang (of record). The Applicants respectfully disagree.

Regarding Claim 1, Jiang also does not delineate distinct elements of an inlet port and an inlet channel. Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are dependent on independent Claim 1. Since independent Claim 1 is an allowable base claim, Claims 8, 10, 12-

14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are all also allowable as being dependent upon an allowable base claim.

Also, there is no teaching in Jiang of a plurality of secondary channels emanating from a first channel specifically regarding Claim 135. For at least these reasons, independent Claim 135 is allowable over the teachings of Gruber, Jiang and their combination.

Within the Office Action, Claims 1, 8, 10, 12-14, 17, 19, 29-32, 38, 40, 128-130 and 132-135 are rejected under 35 U.S.C. §103(a) as obvious over the combined teachings of Gruber in view of Jiang and Chu or Frey. The Applicants respectfully disagree.

Regarding Claim 1, Jiang, Chu or Frey also do not delineate distinct elements of an inlet port and an inlet channel. Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are dependent on independent Claim 1. Since independent Claim 1 is an allowable base claim, Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are all also allowable as being dependent upon an allowable base claim.

Also, there is no teaching of a plurality of secondary channels emanating from a first channel specifically regarding Claim 135. For at least these reasons, independent Claim 135 is allowable over the teachings of Gruber, Jiang and Chu or Frey and their combination.

Within the Office Action, Claims 1, 8, 10, 12-14, 17, 19, 29-32, 38, 40, 128-130 and 132-135 are rejected under 35 U.S.C. §103(a) as obvious over the combined teachings of Gruber in view of O'Neill (of record) and Tonkovich. The Applicants respectfully disagree.

Regarding Claim 1, O'Neill and Tonkovich also do not delineate distinct elements of an inlet port and an inlet channel. Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are dependent on independent Claim 1. Since independent Claim 1 is an allowable base claim, Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are all also allowable as being dependent upon an allowable base claim.

Also, there is no teaching of a plurality of secondary channels emanating from a first channel specifically regarding Claim 135. For at least these reasons, independent Claim 135 is allowable over the teachings of Gruber, O'Neill, Tonkovich and their combination.

Within the Office Action, Claims 1, 8, 10, 12-14, 17, 19, 29-32, 38, 40, 128-130, and 132-135 are rejected under 35 U.S.C. §103(a) as obvious over the combined teachings of Gruber in view of O'Neill and Tonkovich, and Chu or Frey. The Applicants respectfully disagree.

Regarding Claim 1, O'Neill and Tonkovich and Chu or Frey also do not delineate distinct elements of an inlet port and an inlet channel. Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are dependent on independent Claim 1. Since independent Claim 1 is an allowable base claim, Claims 8, 10, 12-14, 17, 19, 32, 38, 40, 128-130 and 132 to 134 are all also allowable as being dependent upon an allowable base claim.

Also, there is no teaching of a plurality of secondary channels emanating from a first channel specifically regarding Claim 135. For at least these reasons, independent Claim 135 is allowable over the teachings of Gruber, O'Neill and Tonkovich and Chu or Frey and their combination.

Within the Office Action, Claims 41 and 44 are rejected under 35 U.S.C. §103(a) as obvious over any of the prior art references as applied to Claim 1 above, and further in view of Cardella, of record. The Applicants respectfully disagree.

Claims 41 and 44 are dependent on independent Claim 1. Since independent Claim 135 is an allowable base claim, Claims 41 and 44 are both also allowable as being dependent upon an allowable base claim.

### **Conclusion**

For the reasons given above, the Applicants respectfully submits that the claims are in a condition for allowance, and allowance at an early date would be appreciated. If the Examiner has any questions or comments, the Examiner is encouraged to call the undersigned at (408) 530-9700 so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,  
HAVERSTOCK & OWENS LLP

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By: / David A. Hill /  
David A. Hill  
Reg. No.: 44,153  
Attorneys for Applicants